

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-19. (Canceled).

20. (Currently Amended) A process for creating and managing pairs of asymmetrical cryptographic keys and associated certificates, each pair of asymmetrical cryptographic keys being intended for a user managed by a computer system, said process comprising:

searching in storage means for at least one user for which a pair of asymmetric keys and an associated certificate must be created, each user associated with a status associated with an attribute one or more attributes, wherein each attribute of said one or more attributes is capable of having any one of the following values: pending, in progress, process ended with an error message, process done, sending a creation request, and done;

creating, based on the said one or more attributes, at least one first individual creation and certification request for a pair of asymmetric keys for said user;

transmitting a key generation request corresponding to said at least one first individual creation and certification request to a key generating center, which issues configured to issue a pair of asymmetric keys in accordance with said key generation request;

creating a public key for said user;[[,]]

creating at least one second individual certification request for said public key; created for said user; and

transmitting a certification authority request corresponding to said at least one second individual certification request to a certification authority and issuing a first certificate in accordance with said certification authority request; and

wherein said at least one first individual creation and certification request and said at least one second individual certification request are created from corresponding

multiple creation and certification requests stored in said storage means relative to a set of users belonging to a preset list, or to a set of users defined by predetermined criteria, as well as relative to model pairs of keys and associated model certificates for either of said sets of users.

21. (Currently Amended) A process according to claim 20, further comprising creating the said pair of keys ~~for a given user~~ when said user lacks the said pair of keys and the corresponding at least one first individual creation and certification request.

22. (Original) A process according to claim 20, further comprising executing said process periodically.

23-25. (Canceled).

26. (Currently Amended) A process according to claim 20 [[23]], further comprising searching in each of the multiple creation and certification requests for all of the users in a condition such that a pair of keys must be created.

27. (Currently Amended) A process according to claim 21 [[24]], further comprising searching in each of the multiple creation and certification requests for all of the users in a condition such that a pair of keys must be created.

28. (Currently Amended) A process according to claim 22 [[25]], further comprising searching in each of the multiple creation and certification requests for all of the users in a condition such that a pair of keys must be created.

29. (Currently Amended) A process for creating and managing certificates for pairs of asymmetrical cryptographic keys, each certificate being intended for a pair of asymmetrical cryptographic keys for a user managed by a computer system, said process comprising:

searching in storage means for at least one user for which a certificate must be created, each user associated with a status associated with an attribute one or more attributes, wherein each attribute of said one or more attributes is capable of having any one of the following values: value of pending, in progress, process ended with an error message, process done, sending a creation request, and done;

creating, based on the one or more attributes, at least one individual certification request for certifying a public key; and

transmitting a certification authority request corresponding to said individual certification request to a certification authority and issuing a first certificate in accordance with said certification authority request; and

creating each of said individual certification requests from a corresponding multiple certification request recorded in the storage means relative to a set of users belonging to a preset list, or to a set of users defined by predetermined criteria, as well as relative to model pairs of keys and associated model certificates for either of said sets of users.

30. (Previously Presented) A process according to claim 29, further comprising creating the certificate for a given user when said user lacks the certificate and the individual certification request.

31. (Previously Presented) A process according to claim 29, further comprising executing said process periodically.

32. (Previously Presented) A process according to claim 30, further comprising executing said process periodically.

33. (Currently Amended) A process according to claim 30, further comprising creating the a new certificate for a given user when the certificate expires.

34. ,(Previously Presented) A process according to claim 31, further comprising creating a new certificate for a given user when the first certificate expires.

35. (Previously Presented) A process according to claim 32, further comprising creating a new certificate for a given user when the first certificate expires.

36-39. (Canceled).

40. (Currently Amended) A process according to claim 29 [[36]], further comprising searching in each of the multiple certification requests of the system for all of the users in a condition such that a certificate must be created.

41. (Currently Amended) A process according to claim 30 [[37]], further comprising searching in each of the multiple certification requests of the system for all of the users in a condition such that a certificate must be created.

42. (Currently Amended) A process according to claim 31 [[38]], further comprising searching in each of the multiple certification requests of the system for all of the users in a condition such that a certificate must be created.

43. (Currently Amended) A process according to claim 33 [[39]], further comprising searching in each of the multiple certification requests of the system for all of the users in a condition such that a certificate must be created.

44. (Previously Presented) A process according to claim 20, wherein each multiple request comprises an attribute relative to at least one execution date and in that said process comprises including in the search only the multiple requests whose expiration date has arrived.

45. (Previously Presented) A process according to claim 20, further comprising performing encoding of one or more extensions in accordance with one or more given rules and entering the encoded extension or extensions into the individual certification request during the creation of said individual certification request.

46. (Previously Presented) A process according to claim 20, further comprising changing a value of the attribute contained in each of the individual first and second requests to indicate status of the process.

47. (Currently Amended) A computer system ~~for creating and managing that creates and manages~~ pairs of asymmetrical cryptographic keys and certificates associated with the pairs of keys, the pairs of keys and the certificates being intended for users managed by said computer system, comprising:

a key generating center ~~for creating that creates~~ at least one pair of keys at the request of a local registration authority with which the key generating center communicates;

at least one certification authority to which the computer system has access for creating a certificate at the request of the local registration authority; and

means for automating, based on one or more attributes associated with one or more users, the creation and/or certification of at least one pair of keys for each user managed by the said computer system, wherein each attribute is capable of having any one of the following values: pending, in progress, process ended with an error message, process done, sending a creation request, and done;

wherein said computer system is configured to form said created request of a local registration authority from a corresponding multiple certification request recorded in the storage means relative to a set of users belonging to a preset list, or to a set of users defined by predetermined criteria, as well as relative to model pairs of keys and associated model certificates for either of said sets of users.

48. (Currently Amended) A computer system according to claim 47, further comprising:

a central management service for creating, updating and consulting objects and users managed by said system;

a local registration authority for handling the creation and/or the certification of keys intended for the objects and the users; and

a central security base containing the users and the objects managed by ~~the said computer system~~ with which the local registration authority communicates[[:]]

~~a key generating center for creating at least one pair of keys at the request of the local registration authority with which the key generating center communicates; and~~

~~at least one certification authority to which the said computer system has access for creating a certificate at the request of the local registration authority.~~

49. (Currently Amended) A computer system according to claim 47, further comprising a wake up mechanism periodically waking up ~~the said~~ local registration authority.

50. (Currently Amended) A computer system according to claim 48, further comprising a wake up mechanism periodically waking up ~~the said~~ local registration authority.

51. (Currently Amended) A process for creating and managing symmetrical cryptographic keys, wherein a symmetrical cryptographic key can be used to both encode and decode data, and wherein each key is intended for a user managed by a computer system comprising:

searching in storage means for at least one user for which a symmetric key must be created, each user associated with a status associated with ~~an attribute one or more attributes~~, wherein each ~~attribute of said one or more attributes~~ is capable of having any one of the following values: pending, in progress, process ended with an error message, process done, sending a creation request and done;

creating, based on the one or more attributes, at least one individual request for creating a symmetric key for said user;

transmitting a key generating request corresponding to said individual creation request to a key generating center, and

issuing by said key generating center a symmetric key in accordance with said transmitted key generating request; and

creating each of said individual certification requests from a corresponding multiple certification request recorded in the storage means relative to a set of users

belonging to a preset list, or to a set of users defined by predetermined criteria, as well as relative to model pairs of keys and associated model certificates for either of said sets of users.

52. (Currently Amended) A computer system ~~for creating that creates~~ symmetrical cryptographic keys, wherein a symmetrical cryptographic key can be used to both encode and decode data, and wherein said computer system manages users, said computer system comprising:

a key generating center for creating at least one pair of keys at the request of the local registration authority with which the key generating center communicates;

at least one certification authority to which the said computer system has access for creating a certificate at the request of the local registration authority; and

means for automating, based on one or more attributes associated with one or more users, the creation of at least one key for each user managed by the said computer system, wherein each attribute of said one or more attributes is capable of having any one of the following values: pending, in progress, process ended with an error message, process done, sending a certification request and done;

wherein said computer system is configured to form said created request of a local registration authority comprises creating each individual request from a corresponding multiple certification request recorded in the storage means relative to a set of users belonging to a preset list, or to a set of users defined by predetermined criteria, as well as relative to model pairs of keys and associated model certificates for either of said sets of users.

53. (Previously Presented) A process according to claim 20, further comprising creating a pair of keys for a given user when a certificate issued in response to a certification authority request for a pair of keys for said user intended for an identical use has been revoked and a new pair of keys has been requested.

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54. (Previously Presented) A process according to claim 29, further comprising creating a pair of keys for a given user when a certificate issued in response to a

certification authority request for a pair of keys for said user intended for an identical use has been revoked and a new pair of keys has been requested.

55. (Previously Presented) The process of claim 20, further comprising periodically activating a local registration authority to perform the searching step.

56. (Previously Presented) The process of claim 55, wherein an activation period is modifiable.

57. (New) A process according to claim 20, wherein said multiple creation requests comprise a plurality of levels having relationships according to a tree structure.

58. (New) A process according to claim 20, wherein said predefined criteria comprises at least one of a geographic and an organizational criteria.

59. (New) A process according to claim 29, wherein said multiple creation requests comprise a plurality of levels having relationships according to a tree structure.

60. (New) A process according to claim 29, wherein said predefined criteria comprises at least one of a geographic and an organizational criteria.

61. (New) A computer system according to claim 47, wherein said multiple creation requests comprise a plurality of levels having relationships according to a tree structure.

62. (New) A computer system according to claim 47, wherein said predefined criteria comprises at least one of a geographic and an organizational criteria.

63. (New) A process according to claim 51, wherein said multiple creation requests comprise a plurality of levels having relationships according to a tree structure.

64. (New) A process according to claim 51, wherein said predefined criteria comprises at least one of a geographic and an organizational criteria.

65. (New) A computer system according to claim 52, wherein said multiple creation requests comprise a plurality of levels having relationships according to a tree structure.

66. (New) A computer system according to claim 52, wherein said predefined criteria comprises at least one of a geographic and an organizational criteria.